77TH CONGRESS } HOUSE OF REPRESENTATIVES { DOCUMENT
1st Session } { No. 321

ASHTABULA HARBOR, OHIO

LETTER

FROM

THE SECRETARY OF WAR

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED APRIL 30, 1941, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION ON REEXAMINATION OF ASHTABULA HARBOR, OHIO, REQUESTED BY RESOLUTION OF THE COMMITTEE ON RIVERS AND HARBORS, HOUSE OF REPRESENTATIVES, ADOPTED FEBRUARY 9, 1939.

July 23, 1941.—Referred to the Committee on Rivers and Harbors, and ordered to be printed with an illustration

WAR DEPARTMENT,
Washington, July 19, 1941.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEAR MR. SPEAKER: I am transmitting herewith a report dated April 30, 1941, from the Chief of Engineers, United States Army, on reexamination of Ashtabula Harbor, Ohio, requested by resolution of the Committee on Rivers and Harbors, House of Representatives, adopted February 9, 1939, together with accompanying papers and illustration.

The Bureau of the Budget has been consulted and advises that while there would be no objection to the submission of this proposed report, it would not be in accord with the program of the President in the absence of evidence showing that the proposed works possess important defense values, to submit during the present emergency any estimate of appropriation for the construction of the project.

Sincerely yours,

HENRY L. STIMSON,
Secretary of War.

61033—41——1

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, April 30, 1941.

THE CHAIRMAN, COMMITTEE ON RIVERS AND HARBORS,
House of Representatives, Washington, D. C.

MY DEAR MR. CHAIRMAN: 1. The Committee on Rivers and Harbors of the House of Representatives, by resolution adopted February 9, 1939, requested the Board of Engineers for Rivers and Harbors to review the reports on Ashtabula Harbor, Ohio, submitted in House Document No. 43, Seventy-third Congress, first session, with a view to determining if it is advisable to modify the existing project at the present time to provide for the improvement of Ashtabula River upstream from the limits of the existing project. I enclose the report of the Board in response thereto.

2. After full consideration of the reports secured from the district and division engineers, the Board recommends modification of the existing project for Ashtabula Harbor, Ohio, to provide a channel 16 feet deep with a bottom width of 100 feet to a point 1,550 feet upstream from the southerly boundary of the turning basin, all substantially in accordance with the report of the district engineer, at an estimated first cost of $38,000, with $2,000 annually for maintenance, in addition to the amount now required, subject to the provisions that local interests give assurances satisfactory to the Secretary of War that they will deepen to a like depth and maintain the area between the channel and the bulkhead and hold and save the United States free from claims for damages resulting from the improvement.

3. After due consideration of these reports, I concur in the views and recommendations of the Board.

Very truly yours,

J. L. SCHLEY,
Major General,
Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

WAR DEPARTMENT,
THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, March 31, 1941.

Subject: Ashtabula Harbor, Ohio.

To: The Chief of Engineers, U. S. Army.

1. This report is in response to the following resolution adopted February 9, 1939:

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the reports on Ashtabula Harbor, Ohio, submitted in House Document Numbered 43, Seventy-third Congress, first session, with a view to determining if it is advisable to modify the existing project at the present time to provide for the improvement of Ashtabula River upstream from the limits of the existing project.

2. Ashtabula Harbor is on the south shore of Lake Erie at the mouth of the Ashtabula River in northeastern Ohio. It comprises an outer harbor of 185 acres protected by breakwaters and an inner harbor in

the lower 1⅞ miles of the river. The existing project for improvement provides for a detached east breakwater 4,400 feet long and a west breakwater and shore arm 7,780 feet long with an entrance 600 feet wide between pierheads; for removal of the old inner east breakwater as may be necessary; for an entrance 28 feet deep between existing breakwaters 600 feet apart; thence a channel 25 feet deep and 1,000 feet wide through the outer harbor to the old inner east breakwater; thence 24 feet deep to the mouth of Ashtabula River; thence 24 feet deep and 160 feet wide to a point 2,000 feet upstream; thence 18 feet deep with a width of 160 feet decreasing to 100 feet and suitably widened at the southerly end, to the upper car-ferry slip; thence 16 feet deep and 100 feet wide to the southerly end of the turning basin; for an approach channel 24 feet deep and 250 feet wide from the 24-foot depth in the outer harbor eastward to the New York Central Railroad Co.'s slip; and for maintenance to a depth of 21 feet of that portion of the outer harbor between the deepened channel and a meridian line though the westerly angle of the east breakwater. The project is completed except for certain deepening in the outer harbor and removal of the east inner breakwater. The total Federal cost of work to December 31, 1940, was $3,929,000, of which $3,419,000 was for new work and $510,000 for maintenance. The approved estimate for annual cost of maintenance is $18,000. Local interests are reported to have spent $1,367,000 for improvement and maintenance of Ashtabula River and the construction and extension of the inner east breakwater. Of this amount $129,000 was spent for dredging the turning basin and the river channel between the car-ferry slip and the head of navigation about ¼ mile above the limit of the Federal project.

3. The city of Ashtabula, with 23,000 inabitants and some 30 manufacturing industries, lies within the trade area of Cleveland. The harbor is primarily on ore-receiving and coal-shipping port. Extensive facilities for transfer of these bulk commodities between ship and railcars are owned and operated by the Pennsylvania Railroad and the New York Central Railroad. In addition, the Pennsylvania Railroad has a car-ferry ship for service to Port Burwell, Ontario, Canada; there are three privately-owned fish docks, a shipyard and drydock on the river; and above the shipyard there is a dock operated by the Kelley Island Lime and Transport Co. During the last 10 years the commerce of the harbor averaged 7,760,000 tons per year, coal and iron ore shipments having comprised 98.9 percent of the total. In this same period receipts of sand, gravel, and stone at the pier of the Kelley Island Lime and Transport Co., located on the river above the present project, averaged 44,800 tons per year. In this unimproved section vessels are limited to a draft of about 11.5 feet.

4. Local interests request the extension of the channel, 16 feet deep and 100 feet wide, upstream in the Ashtabula River to the south property line of the Great Lakes Engineering Works, a distance of 2,550 feet. They claim that the proposed extension would effect a saving of 25 cents per ton in the delivery of limestone to the dock of the Kelley Island Lime and Transport Co.; that it would increase the number of winter berths for vessels loading coal at the harbor, that it would improve conditions at the shipyard, eliminate the hazards from ice jams in the lower river, provide a channel to the site of a proposed municipal dock, and that it would be a general benefit to the commerce and navigation of the harbor.

5. The district engineer finds that little tangible benefit will be derived from a channel above the present head of navigation and accordingly proposes an extension of only 1,550 feet. This further improvement would require a Federal expenditure of $38,000 for dredging of the channel and a non-Federal expenditure of $7,000 for dredging alongside the wharf owned by the Great Lakes Engineering Works. Total carrying charges are estimated as $3,800. Benefits are estimated to include $7,040 in savings on transportation of 22,000 tons of limestone to the harbor in vessels of deeper draft, $1,380 for the movement of sand, gravel, and stone in fully loaded instead of partially loaded vessels, $1,210 in savings to navigation from winter mooring, and $150 in savings in towing costs. In view of definite annual benefits of approximately $9,800 and annual costs of $4,000 he concludes that the extension is justified and recommends that it be provided. The division engineer concurs.

VIEWS AND RECOMMENDATIONS OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS

6. The Board has given careful consideration to the reports and to the information submitted by local interests at a public hearing held at their request. The Board concurs generally in the conclusions of the reporting officers. Commercial use of the channel above the turning basin, which is the present limit of Federal improvement, is restricted by inadequate depth, necessitating only partial loading of vessels. Extension of project depth along the front of the bulkhead that has already been provided by local interests would permit vessels to carry full loads, with resulting economy. The general benefits fully justify the cost of the improvement. A further extension of project depth to the point desired by local interests would be of some intangible value, but not sufficient to warrant the additional cost of such extension at this time. The Board recommends modification of the existing project for Ashtabula Harbor, Ohio, to provide a channel 16 feet deep with a bottom width of 100 feet to a point 1,550 feet upstream from the southerly boundary of the turning basin, all substantially in accordance with the report of the district engineer, at an estimated first cost of $38,000, with $2,000 annually for maintenance, in addition to the amount now required; subject to the provisions that local interests give assurances satisfactory to the Secretary of War that they will deepen to a like depth and maintain the area between the channel and the bulkhead and hold and save the United States free from claims for damages resulting from the improvement.

For the Board.

THOMAS M. ROBINS,
Brigadier General, Corps of Engineers,
Senior Member.

REEXAMINATION OF ASHTABULA HARBOR, OHIO

SYLLABUS

The limiting channel widths and depths now available in Ashtabula River from the southern limit of the project to the head of navigation prohibit the use of the large type of cargo carriers for transporting limestone, prevent the free passage of vessels during periods when ships are docked in this section, and seriously restrict the use of the shipyard facilities particularly during the winter repair season.

The district engineer recommends the modification of the existing project at Ashtabula Harbor, Ohio, to provide for a channel 16 feet deep and 100 feet wide from the southern limit of the present project to the head of navigation, a distance of about 1,550 feet, at an estimated first cost of $38,000 and $2,000 annually for maintenance thereafter.

WAR DEPARTMENT,
UNITED STATES ENGINEER OFFICE,
Buffalo, N. Y., January 30, 1941.

Subject: Review of reports on Ashtabula Harbor, Ohio.
To: The Division Engineer, Great Lakes Division, Cleveland, Ohio.

1. *Authority.*—This report is submitted in compliance with the following resolution, adopted February 9, 1939:

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors created under section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the reports on Ashtabula Harbor, Ohio, submitted in House Document Numbered 43, Seventy-third Congress, first session, with a view to determining if it is advisable to modify the existing project at the present time to provide for the improvement of Ashtabula River upstream from the limits of the existing project.

2. *Reports being reviewed.*—In the reports being reviewed, contained in House Document No. 43, Seventy-third Congress, first session, extension of the breakwaters, removal of a portion of the existing breakwater and deepening in the outer harbor was recommended, conditioned on deepening at the terminal docks and in the channels leading thereto by local interests.

3. A review of the above reports contained in House Committee Document No. 78, Seventy-fourth Congress, second session, recommended extension of the project upstream, with depths varying from 24 to 16 feet, to the southerly end of the turning basin at the drydock of the Great Lakes Engineering Works, and deepening in the outer harbor and in the channels to the ore terminals.

4. *Description.*—Ashtabula Harbor, Ohio, is located at the mouth of Ashtabula River on the south shore of Lake Erie about 59 miles easterly of Cleveland, Ohio, and 44 miles westerly from Erie, Pa. The outer harbor is an irregular-shaped breakwater-protected area of about 185 acres. The inner harbor extends 1⅞ miles up the Ashtabula River to within about 1,550 feet of the head of navigation, and varies in width from 100 to 160 feet, widened at the bends. The Ashtabula River, 39 miles long, drains about 137 square miles.

5. The controlling depths from deep water in Lake Erie through the outer harbor and in the approach channel to the New York Central Railroad slip is 24 feet; in the east basin, 20 feet; in the lower 2,000 feet of Ashtabula River, 24 feet; thence to the upper car-ferry slip, 18 feet; and in the remainder of the river upstream to the southern limit of the project, 16 feet. From the project limit upstream to the head of navigation, depths in the narrow channel along the dock decrease from 14 to 4 feet.

6. Depths are referred to low-water datum for Lake Erie which is 570.5 feet above mean tide at New York City. Since 1900, the level of Lake Erie has fluctuated from a high monthly mean of 3.77 feet above to 1.07 feet below that plane. The greatest annual fluctuation as shown by the highest and lowest monthly means of any year was 2.50 feet and the least 0.90 foot. Extreme variations of water level at Ashtabula Harbor due to storms and other causes have been

from about 4 feet above to 1 foot below low-water datum. The harbor entrance opens to the north, and is exposed to storms from the southwest through north to northeast.

7. The table below shows the depths in the Great Lakes connecting channels:

Channel:	*Project depth in feet*
St. Marys River connecting Lakes Superior and Huron:	
Up-bound	21
Down-bound	24
Detroit and St. Clair Rivers connecting Lakes Erie and Huron:	
Up-bound	21
Down-bound	25
Welland Canal connecting Lakes Erie and Ontario	25
New York State Barge Canal—Tonawanda, Oswego, Albany	[1] 12
St. Lawrence River canals	14

[1] The work of deepening the New York State Barge Canal between Oswego and the Hudson River to 14 feet between locks will be completed in 1943.

8. The general locality is shown on United States Lake Survey Charts Nos. 3, 34, and 342, and on the map accompanying this report.

9. *Tributary area.*—While Ashtabula and its vicinity are largely dependent upon Cleveland as a distributary area, Ashtabula County, which is largely agricultural, may be regarded as an area tributary to the city of Ashtabula except for the northeasterly portion of the county which centers around the city of Conneaut. The population of the city of Ashtabula is about 23,000, and the assessed valuation is $37,189,160. There are four commercial and savings banks with resources of $7,668,000, and four building and loan assoctiaions with resources of $6,515,000.

10. The city's 30 manufacturing establishments include railroad repair shops, a leather manufactory, small plants producing small farm tools and automobile parts, a corrugated-box factory, a general foundry and machine shop, a shipyard, and plants engaged in the production of dairy products. Ashtabula is located on one of the main easterly and westerly trunk highways, and is served by the New York Central, the Pennsylvania, and the New York, Chicago & St. Louis Railroads. The first 2 are owners of, and have direct access to, much of the improved water front on Ashtabula Harbor.

11. *Bridges.*—Data on bridges crossing the Ashtabula River within the limits of the existing project and considered improvements are given in the table below:

Owner	Miles above river mouth	Built under War Department permit	Kind	Horizontal clearance	Vertical clearance	Remarks
				Feet	*Feet*	
Ashtabula County	0.72	Yes	Highway	140	11.4	Bascule bridge
New York Central R. R	1.63	Yes	Railroad	100	11.4	Do.

12. *Existing project.*—The original project for Ashtabula Harbor, inaugurated by the River and Harbor Act of May 20, 1826, provided for the removal of obstructions at the mouth of Ashtabula River, and the construction of two piers at the mouth extending lakeward to a depth of 10 feet. From time to time the piers were extended and repaired, and the channel between them dredged to greater depths.

13. The existing project, adopted by the River and Harbor Act of June 3, 1896, and as last modified by the River and Harbor Act of August 26, 1937, provides for the following:

(*a*) An outer harbor about 185 acres in area protected by breakwaters, the west breakwater 7,780 feet long, and the east breakwater 4,400 feet long, all of rubble-mound construction, except 430 feet of the west breakwater, which consists of timber-crib substructure and stone superstructure.

(*b*) A west pierhead of timber-crib substructure and concrete superstructure.

(*c*) An east light foundation located 600 feet easterly from the west pierhead, consisting of a concrete superstructure founded on the outer end of the rubble-mound east breakwater.

(*d*) The removal of 250 feet of the old inner east breakwater and of such additional length as may be necessary.

(*e*) An entrance 28 feet deep between existing breakwaters 600 feet apart; thence a channel of 25-foot depth and 1,100-foot maximum bottom width through the outer harbor to the old inner east breakwater; thence 24 feet deep to the mouth of Ashtabula River; thence a channel 24 feet deep with a bottom width of 160 feet to a point 2,000 feet upstream; thence a channel 18 feet deep (except where ledge rock may be encountered) with a bottom width of 160 feet, decreasing to 100 feet and suitably widened at the southerly end, to the upper car-ferry slip; thence a channel 16 feet deep (except where ledge rock may be encountered) with a bottom width of 100 feet suitably widened at bends and in the turning basin, to the southerly end of the turning basin; also an approach channel 24 feet deep, with a minimum width of 250 feet from the 24-foot depth section of the outer harbor eastward to the New York Central Railroad Co.'s slip.

(*f*) Maintenance to 21-foot depth of that portion of the outer harbor between the deepened channel and a meridian line through the westerly angle of the east breakwater.

The existing project is about 90 percent complete. The work remaining to be done to complete the project is the conditional removal of the east inner breakwater. The portion of the outer harbor to be maintained to 21-foot depth has not all been deepened to that depth, as shale rock was encountered over a portion of the area.

14. The cost of work done by the Federal Government at Ashtabula Harbor to December 31, 1940, is shown below:

Item	New work	Maintenance	Total
Previous projects	$565,000		$565,000
Existing project	[1] 2,854,000	$510,000	[1] 3,364,000
Total	3,419,000	510,000	[1] 3,929,000

[1] Includes $537,000 public works funds.

The latest approved estimate for annual maintenance is $18,000 and is considered adequate. No modifications of the existing project are pending before Congress.

15. *Local cooperation.*—The River and Harbor Act approved August 26, 1937, provides that the deepening of the outer harbor and river channels to 24 feet or more shall not be undertaken until local interests give assurance satisfactory to the Chief of Engineers that they will deepen vessel berths and slips to an extent sufficient to adequately utilize and to justify the cost of the increased depth provided by the Federal Government. Dredging in the 18- and 16-foot project depth sections of the river channel was subject to the conditions that local interests provide adequate bulkheads for channel protection, or release the United States from all claims for damages to riparian property that may occur in carrying out the channel

improvements. These conditions have been complied with, and were approved June 30, 1936, June 19, 1937, and March 22, 1938.

16. *Other improvements.*—The city of Ashtabula and other local interests have improved and maintained Ashtabula River, and have constructed an extension to the old Federal inner east breakwater, all at a total cost of $1,367,000. Of this amount, $107,000 was spent by the Great Lakes Engineering Works and $22,000 by the Kelley Island Lime and Transport Co. for dredging the turning basin and the river channel between the car-ferry slip and the head of navigation. Local interests have constructed docks and slips for the accommodation of bulk lake freighters for which costs are not obtainable.

17. *Terminal and transfer facilities.*—Extensive ore and coal terminals, owned by the New York Central Lines, are located along the east side of the river and the slip which opens into the outer harbor easterly from the river. The Pennsylvania Railroad Co. owns similar terminals on the west side of the river. The facilities at these terminals, which include 14 ore-unloading machines and 2 coal-loading machines, are open for general public use. These railroads have an aggregate developed dock frontage of 18,500 feet. The Pennsylvania Railroad has facilities for a car ferry plying between Ashtabula Harbor and Port Burwell, Ontario, Canada. There are 3 privately owned fish docks; a dock operated by the Kelley Island Lime and Transport Co. equipped with locomotive cranes for receiving sand, gravel, and crushed stone; and a shipyard and drydock equipped for work on large lake vessels. The building berth at the shipyard is equipped with "shear legs" and is the only available equipment in Ashtabula Harbor capable of lifting engines, boilers, and other heavy machinery from large boats. The dock operated by Kelley Island Lime and Transport Co. is leased from the Great Lakes Engineering Works. The facilities are considered adequate for existing commerce.

18. *Improvements desired.*—A public hearing was held on March 21, 1939, at Ashtabula, Ohio, at which a request for the modification of the existing project was made as follows:

> The port commission of the city of Ashtabula hereby respectfully requests that the existing project to dredge Ashtabula River upstream to the south end of the turning basin at the Great Lakes Engineering Works be modified, so that the improvement may be extended from its present terminus to the south line of the Great Lakes Engineering Works property. This modification to be effected by the dredging of the stream to a minimum depth of 16 feet, and a minimum bottom width of 100 feet to this new proposed point.

Representatives of the Great Lakes Engineering Works stated that they will agree to dredge the area between the channel line and their docks and release the United States from any and all claims for damages arising out of damage to their property that may result from the requested improvements.

19. Local interests gave the following reasons in justification of the requested modifications:

(*a*) Shoal water between the project limit and the head of navigation discourages shippers from making deliveries to the Kelley Island Lime and Transport Co. dock, because of small pay loads and danger of grounding. The proposed channel would accommodate the larger type of bulk freighter, and reliable boat owners state that this would effect a saving of 25 cents per ton of limestone handled.

(*b*) The requested channel would increase the number of winter berths. More winter berths are desired at Ashtabula, as coal can be loaded out from 1 to 2 weeks earlier than from almost any other port.

(*c*) The desired channel would increase the availability of the facilities of the shipyard and drydock which are capable of accommodating the largest lake vessels. Because of the limited capacities of the shipyards at some of the other Lake Erie ports, many boat owners find it necessary to have repairs made at Ashtabula even though a delay in spring operations or additional transfer costs may be involved.

(*d*) It would also eliminate danger of ice jams and resulting floods which have caused damage to vessels, bridges, and shipyard equipment.

(*e*) It is a general improvement that would benefit all lake commerce, and increase the volume of traffic at this point. The Kelley Island Lime and Transport Co. states that they handle approximately 100,000 tons of material a season, and that the improvement would increase this tonnage.

(*f*) It would provide a channel to the site for a municipal dock for which the city of Ashtabula has been negotiating for some time. This dock would have connections with railroads and highways, and facilities for automobile transfer to meet the increase in such commerce anticipated by officials of the city of Ashtabula.

(*g*) It would benefit the lower harbor by reducing silting, and hence reduce maintenance dredging.

(*h*) From the standpoint of national defense, the desired improvement would increase facilities for the construction of naval vessels.

(*i*) It would make the upper flats which are available for industrial sites accessible to water and rail transportation.

(*j*) Pay rolls of Great Lakes Engineering Works and the Kelley Island Lime and Transport Co. would total about $250,000 annually.

(*k*) As Ashtabula is a transfer point for interstate commerce, the Federal Government should stand the expense of modification.

(*l*) Federal maintenance cost per ton of cargo transshipped is low as compared with other ports.

(*m*) The improvements would provide room for passing without moving boats moored at the Great Lakes Engineering Works repair dock.

20. From an investigation subsequent to the public hearing, the following additional reasons in justification of the requested modifications were obtained:

(*a*) The Kelley Island Lime and Transport Co. estimates that approximately 50,000 tons of stone are required to complete the authorized streets and highways program. A reduction in freight charges would be a saving to the taxpayers for the completion of this highway program. It was further locally estimated, that with a reduction in freight charges through the use of bulk freighters, 10,000 tons of stone (new commerce) would be used annually for new highway construction and maintenance.

(*b*) An improved channel would permit complete use of all shipyard repair facilities, and permit simultaneous repair work on two more boats than can now be accommodated.

(*c*) The desired channel to the proposed municipal dock would afford access to a basin, that may be provided later, for recreational craft.

21. A hearing was held also before the Board of Engineers for Rivers and Harbors at Washington, D. C., on October 28, 1940, following an appeal by local interests on notice of an unfavorable report. Present at the hearing were officials of the city of Ashtabula, representatives of railroads and of the Great Lakes Engineering Works. Additional data were submitted which were not available at the hearing before the district engineer, but which local interests believed would have special bearing on further analysis of their original request. This data consisted of estimates of commerce, transportation and commodity costs, ship repair costs, statements from users of grade A limestone, and a bona fide offer that Lake Huron quarry stone deliveries would be made at Ashtabula Harbor by the large type self-unloader vessels, if the requested channel dimensions were provided.

61033—41——2

COMMERCE

22. *Present.*—Statistics on the water-borne commerce of Ashtabula Harbor are given in the following table:

Year	Receipts	Shipments	Total	Year	Receipts	Shipments	Total
	Tons	*Tons*	*Tons*		*Tons*	*Tons*	*Tons*
1930	6,452,474	4,323,270	10,775,744	1937	7,406,841	4,986,217	12,393,058
1931	2,171,316	4,021,372	6,192,688	1938	1,855,022	3,540,946	5,395,968
1932	444,341	3,460,223	3,904,564	1939	5,628,588	4,016,815	9,645,403
1933	2,351,455	3,381,533	5,732,988				
1934	1,980,272	4,386,626	6,366,898	10-year average	3,667,224	4,092,723	7,759,947
1935	3,329,481	4,308,985	7,638,466				
1936	5,052,446	4,501,243	9,553,689				

During the past 10 years iron ore receipts and coal shipments have comprised 98.9 percent of the total water-borne commerce of Ashtabula Harbor. The magnitude of each movement is dependent upon general economic conditions, and follows no definite trend. A flow chart showing the movement in the harbor for the shipping season of 1939 accompanies this report.

23. The classification of commerce for the calendar year 1939 follows:

Class and type	Material	Tons	Total (Tons)
General traffic:			
Canadian exports			1,188,928
	Coal	1,186,080	
	Coke	2,599	
	Ingot molds	249	
Lakewise receipts			5,604,225
	Agricultural meal	3,367	
	Limestone	10,564	
	Iron ore	5,590,294	
Lakewise shipments			2,655,029
	Coal	2,654,950	
	Oil	79	
Local receipts			23,177
	Fish	731	
	Sand	22,446	
Internal receipts, via New York State Barge Canal, Oswego			45
	Cylindrical boilers	45	
Car-ferry traffic:			
Canadian imports[1]			936
	Hides	77	
	Binder twine	13	
	Asbestos	30	
	Feldspar	777	
	Tin plate scrap	39	
Canadian exports [1]			172,858
	Soybean, oil-cake meal	304	
	Coal	167,112	
	Coke	1,172	
	Firebrick	648	
	Fire clay	919	
	Flue lining	17	
	Molding sand	168	
	Sewer pipe and fittings	113	
	Boiler tubes	811	
	Scrap iron	46	
	Steel	1,445	
	Machine parts	14	
	Unclassified	89	
Lakewise receipts [1 2]			205
	Canned fish	176	
	Lath	29	
Grand total, all traffic			9,645,403

[1] Number of railroad cars: In-bound, 2,876—dead weight, 61,834 net tons; out-bound, 2,708—dead weight, 61,512 tons, not included.

[2] United States merchandise shipped through Canada in bond for return to the United States.

24. Statistics on the water-borne commerce from the project limit at the south end of the turning basin to the head of navigation follows:

Year	Local receipts, sand and gravel	Lakewise receipts, stone	Total	Year	Local receipts, sand and gravel	Lakewise receipts, stone	Total
	Tons	*Tons*	*Tons*		*Tons*	*Tons*	*Tons*
1931	47,150	13,800	60,950	1937	28,900	14,890	43,790
1932	37,600	47,312	84,912	1938	34,000	14,517	48,517
1933	12,887	21,972	34,859	1939	22,446	[1] 13,931	36,377
1934	18,214	9,004	27,218				
1935	24,015	14,105	38,120	9-year average	27,012	17,778	44,790
1936	17,900	10,470	28,370				

[1] Includes 3,367 tons of agricultural meal.

Sand, gravel, and stone combined comprise 0.6 percent of the total annual receipts of the harbor. These figures, based on actual records, do not substantiate the claim of local interests that the average annual receipts of sand, gravel, and stone total about 100,000 tons.

25. About 10 percent of the material received at the Kelley Island Lime and Transport Co. dock is shipped by rail to Pittsburgh, Pa., and Youngstown, Ohio. This material is lake sand used in glass manufacturing. Competition is limited, and receipts for this purpose are dependent primarily upon general economic conditions. A greater demand for this material is not apparent at present. The remainder of the sand, gravel, and stone received at this dock, amounting to about 40,000 tons annually, is used locally, and the tonnage handled is dependent upon the amount and extent of local construction. It can be economically distributed in competition with local supply to within about a 10-mile radius of the city of Ashtabula. The Kelley Island and Marbelhead quarries in Lake Erie are the sources of all of the grade B stone and the small quantities of agricultural lime received. The grade A stone meeting the specifications of the Ohio State department of highways is secured from the Wagner quarries near Sandusky, Ohio.

26. *Prospective.*—Although local interests state that general commerce above the present southern limit of the project will increase considerably as a result of the desired improvements, such an increase is considered improbable other than in limestone. The predicted increase of 10,000 tons of highway stone to be handled annually by the Kelley Island Lime and Transport Co. is considered reasonable.

27. *Vessel traffic.*—The number, character, and draft of vessels arriving and clearing at the port of Ashtabula during the calendar year 1939 are shown in the following table:

IN-BOUND [1]

Draft (feet)	Steamers	Motor vessels	Small gas	Car-ferry	Total
21 to 22	43				43
20 to 21	276				276
18 to 20	221				221
16 to 18	122				122
14 to 16	257				257
12 to 14	170			125	295
Less than 12	102	128	2,419		2,649
Total	1,191	128	2,419	125	3,863
Total net registered tonnage	4,396,743	2,581	10,536	190,625	4,600,485
Passengers: Excursion	2,556				2,556

See footnote at end of table.

OUT-BOUND [1]

Draft (feet)	Steamers	Motor vessels	Small gas	Car-ferry	Total
21 to 22	12				12
20 to 21	39				39
18 to 20	319				319
16 to 18	177			125	302
14 to 16	488				488
12 to 14	27				27
Less than 12	135	128	2,419		2,682
Total	1,197	128	2,419	125	3,869
Total net registered tonnage	4,427,319	2,581	10,536	190,625	4,631,061
Passengers: Excursion	2,556				2,556

[1] Includes vessels of foreign registry as follows: Steamers, in-bound, 216; net registered tonnage, 525,030; steamers, out-bound, 217; net registered tonnage, 529,770; motor vessels, 1; net registered tonnage, 10.

28. Operations at the Great Lakes Engineering Works have been less active during the economic depression than formerly, and at present are limited to vessel repairs. Use of the upper river channel has been correspondingly reduced. Of the total number of ships repaired at the plant during 1935 and 1938, inclusive, approximately 25 percent, not requiring drydocking, were tied up at the company mooring berths; contributing to the congestion arising when other vessels wished to pass this point. The number and length of vessels receiving repairs at the shipyard during the 10-year period 1929–38 are shown in the following table:

Vessels repaired at the Ashtabula Shipyard of the Great Lakes Engineering Works 1929 to 1938

Calendar year [1]	Number and length of vessels repaired						Total
	Over 500 feet	400 to 500 feet	300 to 400 feet	200 to 300 feet	100 to 200 feet	Under 100 feet	
1929	12	2	7	0	0	1	22
1930	7	3	4	1	0	0	15
1931	5	1	1	0	3	0	10
1932	1	0	1	0	4	0	6
1933	14	5	3	0	1	0	23
1934	9	1	1	0	2	0	13
1935	8	0	0	0	3	1	12
1936	8	4	1	0	1	0	14
1937	11	6	0	1	0	1	19
1938	7	0	0	0	0	0	7
Totals	82	22	18	2	14	3	141

[1] Figures for 1939 are not available.

In addition to the boats repaired at the shipyard, other boats are repaired by Great Lakes Engineering Works while moored at other docks downstream from the shipyard. During 1937, a total of 33 boats were repaired at Ashtabula Harbor; 19 at the shipyard and 14 at their moorings.

29. Boats owned and operated by the Kelley Island Lime and Transport Co. comprise the majority of the vessel traffic using the

channel above the project limits. Data on the length, width, depth, and draft of these boats are as follows:

Vessels owned by Kelley Island Lime and Transport Co.

Name	Keel length	Beam	Depth	Maximum draft
	Feet	*Feet*		
Kelley Island	175	38	15 feet 6 inches	13 feet.
Hydro	169	40	19 feet	14 feet 6 inches.
McKerchey, John M	161	37	11 feet	10 feet 6 inches.

The average number of boat trips per year to the Kelley Island Lime and Transport Co. dock is about 49. While cargoes of stone have been delivered to this dock by the larger type of cargo carriers, such deliveries have been few as they can only be made under the most favorable channel conditions. The last delivery made by one of these boats was in 1937.

30. *Difficulties attending navigation.*—The channel upstream from the project limit to the head of navigation is so narrow that when a vessel is moored at the building berth of Great Lakes Engineering Works, vessels bound to the Kelley Island Lime and Transport Co. dock cannot pass. On advance notice, the Great Lakes Engineering Works hires tugs to shift the vessels to the turning basin to permit passage, and then back to the building berth. They claim this shifting, that would be avoided by the requested improvement, increases their annual charges for tug hire $500.

31. Grade A stone can be secured from quarries on Lake Huron at a saving over present cost, but cannot be transported economically in the larger boats because of the small pay loads necessitated by the limited draft available to the dock located in that part of the Ashtabula River under consideration. All space along the present maintained channel suitable for a material storage yard is being used for other purposes. The small sandsuckers owned by the Kelley Island Lime and Transport Co. have consequently been used to transport all stone delivered to their Ashtabula dock since 1937, but due to the extent of open lake navigation involved in transporting stone from the Lake Huron quarries and consequent hazards to these craft, nearly all grade A stone has been secured from the Wagner quarries near Sandusky, Ohio, on Lake Erie.

32. During the winter repair season, boats moored at the building berth at the shipyard force floating ice from the narrow channel along the dock, and cause it to ground on the shoal flats in the river. During a severe winter, this results in an ice jam and subsequent property damage. Three times in the past 10 years, moored boats, carried downstream by floating ice following the breaking up of such a jam, have crashed into the New York Central Railroad bridge, causing damage to both the boats and the bridge. The shipyard and equipment have also suffered some damage from flooding as a result of these ice jams.

33. Reported damages resulting from ice jams in the river for the period 1929 to 1938, inclusive, are as follows:

Year	Damage				Total
	Vessels	Shipyard	Railroad		
			Bridges	Service	
1929 [1]	$3,500	$124	$8,500	[2]	$12,124
1929 [3]	2,500				2,500
1930					
1931		200			200
1932					
1933					
1934					
1935					
1936		150			150
1937	13,283		29,410	[2]	42,693
1938					
Total	19,283	474	37,910	[2]	57,667
10-year average					5,767

[1] January.
[2] No figures available except that in 1937 1 of the 2 tracks leading to the New York Central's ore docks and storage yard could not be used for 5 months, and use of the remaining track was restricted.
[3] February.

Due to these damages, and resultant complaints from the insurance companies, no vessels have been moored at the building berths during the winter months since 1937. Additional damages were reported as resulting from the shoal conditions of the turning basin, but since the basin has now been deepened such damages are not included in the above table.

34. *Survey.*—A physical survey of that portion of the Ashtabula River under consideration was made in June and August 1939. Results of this survey are shown on a map entitled "Ashtabula Harbor, Ohio, Ashtabula River," dated January 8, 1941, which accompanies this report.

35. *Plan of improvement.*—Local interests requested modification of the existing project by the dredging of a channel having a minimum bottom width of 100 feet and a swept depth of 16 feet below low-water datum in Ashtabula River upstream from the present southern limit of the project to the south boundary line of the Great Lakes Engineering Works property, a distance of approximately 2,550 feet.

36. The estimated first costs of the desired improvements, including engineering overhead and inspection, are:

Estimated first cost of desired improvements

Item	Quantity (cubic yards)	Unit cost	Construction cost	Total first cost (approximate)
Federal first cost:				
Dredging shale	16,000	$2.75	$44,000	
Dredging earth	158,000	.45	71,100	
Total Federal first cost (approximate)				$115,000
Non-Federal first cost:				
Deepening area between docks and proposed channel line:				
Dredging shale	7,800	2.75	21,450	
Dredging earth	30,000	.45	13,500	
Total non-Federal first cost (approximate)				35,000
Total Federal and non-Federal first cost (approximate)				150,000

37. As that portion of the desired channel above the head of navigation would serve only a doubtful volume of traffic to the proposed municipal dock, including recreational craft, there is presented as an alternative, a plan for a channel 16 feet deep below low water datum, with a minimum bottom width of 100 feet from the present southern limit of the project to the head of navigation, a distance of approximately 1,550 feet. No Federal dredging to be done within 50 feet of existing docks. This plan would extend the project upstream to the same point to which local interests have, at considerable expense, carried their dock, bulkhead, and some dredging.

38. The estimated first costs of the alternative plan of improvement including engineering, overhead, and inspection are:

Estimated first cost of alternative plan

Item	Quantity (cubic yards)	Unit cost	Construction cost	Total first cost (approximate)
Federal first cost: Dredging earth	85,000	$0.45	$38,250	$38,000
Non-Federal first cost: Deepening area between docks and proposed channel line—dredging earth	15,000	.45	6,750	7,000
Total Federal and non-Federal first cost (approximate)				45,000

39. *Aids to navigation.*—The existing aids to navigation are considered adequate for the existing project and the recommended extension up the Ashtabula River.

40. *Analysis of economic justification of proposed improvements.*—The economic analysis of the proposed improvements follows:

Investment costs and annual charges

Item	Plan proposed by local interests	Alternative plan considered
(*a*) Investment costs:		
1. Federal investment:		
(*a*) First cost to Engineer Department	$115,000	$38,000
(*b*) First cost to Coast Guard (navigation aids)	None	None
Total Federal first cost	115,000	38,000
(*c*) Interest during construction	None	None
Total Federal investment	115,000	38,000
2. Non-Federal investment:		
(*a*) First cost to non-Federal interests	35,000	7,000
Total non-Federal first cost	35,000	7,000
(*b*) Interest during construction	None	None
Total non-Federal investment	35,000	7,000
3. Total Federal and non-Federal investment	150,000	45,000
(*b*) Annual carrying charges:		
1. Federal annual carrying charges:		
(*a*) Interest, 3 percent of Federal investment	3,450	1,140
(*b*) Amortization of obsolescence and depreciation (50 years, 3 percent)	1,019	337
(*c*) Increased cost of maintenance	3,000	2,000
Total Federal annual carrying charges (approximate)	7,500	3,500
2. Non-Federal annual carrying charges:		
(*a*) Interest, 4 percent of non-Federal investment	1,400	280
(*b*) Amortization of obsolescence and depreciation (50 years, 4 percent)	229	46
(*c*) Increased cost of maintenance	None	None
Total non-Federal annual carrying charges (approximate)	1,600	300
3. Total Federal and non-Federal annual carrying charges (approximate)	9,100	3,800

Maintenance of the 50-foot strip along the existing dock has been omitted from the foregoing estimates as it is believed the annual cost of such work will not exceed present maintenance costs to the Kelley Island Lime and Transport Co. of their present channel.

41. *Benefits from desired improvements.*—Approximately 12,000 tons of grade A stone, used for highway and similar construction, are handled annually at Ashtabula. At the present time this stone costs about 52 cents per ton at Lake Erie quarries, 28 cents per ton for rail transportation to the shipping dock, and 50 cents per ton to transport via the Kelley Island Lime and Transport Co.'s boats to Ashtabula, or a total cost of $1.30 per ton, of which 78 cents is to cover transportation charges. An equally good grade of stone is available at Lake Huron lake-front quarries, at approximately 50 cents per ton (present price). Improvement of the channel adjacent to the Kelley Island Lime and Transport Co.'s dock would permit shipment of this stone via larger self-unloading boats at a cost of about 46 cents per ton, making the total cost of this stone 96 cents per ton.

42. Assuming an average price of grade-A stone of 52 cents per ton, the benefits which would result from the desired improvements would be in transportation charges alone, and would amount to 32 cents per ton. The net saving which would thus be effected is $3,840 annually. An additional similar saving on the estimated annual increase in stone receipts of 10,000 tons, would amount to $3,200, making a total estimated annual saving in transportation costs of grade-A stone of $7,040.

43. Under present conditions, the three Kelley Island Lime and Transport Co. vessels are limited to a draft of about 11.5 feet. These vessels have a maximum draft of 10.5, 13.0, and 14.5 feet, respectively, and were the desired improvements made, the two larger vessels could load to their maximum respective drafts. The saving which would result from moving grade-B stone from Lake Erie quarries at increased drafts is estimated at 2 cents per ton per draft foot. Applying this saving, the following is obtained:

Vessel		Increased draft with improvement	Savings per ton	Tons carried per season	Total annual savings
Name	Maximum draft				
	Feet				
McKerchey	10.5			4,000	
Kelley Island	13.0	1.5	$0.03	12,000	$360
Hydro	14.5	3.0	.06	17,000	1,020
Total				33,000	1,380

44. The annual loss to shipping interests due to delayed repairs, because of the inability to moor at the building berth during winter months, is determined to be equal to the revenue profit from two boats for one trip each. The average profit per boat of $18 per hour, applied to the average trip of 30 hours, gives an evaluated estimated annual loss of approximately $1,100. The additional cost due to the necessity of transferring these two boats to the building berth from the lower channel after the ice has cleared from the river, is estimated on the basis of the difference between the transfer charge, with and without own power, of $56 per hour for 1 hour each for these two

boats, or approximately $110 annually. The total annual savings to navigation interests resulting from winter mooring at the building berth would, therefore, be approximately $1,210. The marine insurance companies advise that such mooring would again be authorized by them at present rates were the channel at this point dredged to the width requested.

45. The total annual costs for tug hire to the Great Lakes Engineering Works for transferring vessels between the fitting-out slip and the drydock and building berth average about $1,500. The company claims $500 of this amount would be eliminated were the temporary transfer of vessels from the building berth no longer necessary to permit the movement of vessels to and from the Kelley Island Lime and Transport Co.'s dock. Based on the average number of ships repaired at this berth, and the extent of traffic to and from the stone dock, it is estimated that the annual savings to commerce to result from the elimination of this charge would approximate $150.

46. Other benefits which are real, but intangible and difficult to evaluate, would result from the increase in available winter mooring facilities for Great Lakes boats in Ashtabula Harbor.

47. The estimated annual benefits which the proposed improvements will effect are summarized as follows:

(*a*) Transportation savings:	
Grade A limestone:	
Present commerce	$3,840
New commerce	3,200
Grade B limestone: Present commerce	1,380
(*b*) Ship repair cost savings	1,210
(*c*) Tug hire savings	150
Total estimated annual benefit, approximate	9,800

48. *Water-power and other special subjects.*—There is no question of water-power development to be considered in connection with the desired improvements. No seaplane bases are under consideration at this locality, and the improvements considered in this report are not related to, and would have no effect upon, conservation of water or soil, malaria control and public health, or stream pollution.

49. *Shore-line changes.*—The configuration of the shore line in the vicinity of the harbor would not be affected by the desired improvements.

50. *Discussion.*—The extension of the channel above the head of navigation would serve such commerce as might use the proposed municipal dock, would provide further expansion of the harbor's winter mooring facilities, and would serve such recreational craft as might base up river should a harbor be developed as proposed by local interests. Any considerable use of a municipal dock is deemed improbable. Commerce using public docks at other ports on Lake Erie has been steadily declining, and there is no reason to assume that development of such commerce at Ashtabula would be contrary to the general trend. The benefits that would result from the further extension of winter mooring facilities are intangible, and if they could be evaluated would be small under present conditions.

51. The ports on Lake Erie regularly receiving cargoes of automobiles are Cleveland and Buffalo. Ashtabula Harbor is sometimes used as an automobile transfer point when because of adverse ice

conditions, automobile carriers cannot reach the regular ports. The existing facilities of Ashtabula Harbor are adequate for these infrequent cargoes.

52. As a national-emergency measure the improvement is not warranted; since, if conditions requiring more commodious fitting-out berths should arise, any necessary channel extension in connection therewith could be readily made.

53. Silting in the harbor as a whole would not be reduced by the desired improvement as claimed by local interests, because the volume of material moving down the river would not be affected. The improvement would, however, increase the area that must be maintained, over which this material is deposited, and thus increase the cost of annual maintenance dredging accordingly.

54. Data on the investment, annual costs, and benefits of the improvements are summarized below:

Plan of improvement	Investment			Annual costs			Annual benefits
	Federal	Non-Federal	Total	Federal	Non-Federal	Total	
Desired plan	$115,000	$35,000	$150,000	$7,500	$1,600	$9,100	$9,800
Alternative plan	38,000	7,000	45,000	3,500	300	3,800	9,800

55. *Conclusions.*—The improvement of Ashtabula River, from the southern limit of the present project to the head of navigation, would result in evaluated annual savings totaling approximately $9,800. In addition to these evaluated benefits, this improvement would result in certain intangible benefits in the interest of general navigation not readily evaluated, such as: Increased winter employment as a result of greater winter overhaul activities; the elimination of a major portion of the damages now suffered by shipyard facilities, due to ice jams and resultant floods; the free movement of vessels to and from the Kelley Island Lime and Transport Co.'s dock; the increased availability of this company's boats for the transportation of lake sand and gravel to their sand docks located at this and other ports; and the increase in available winter mooring facilities for Great Lakes carriers in Ashtabula Harbor. The prospective benefits which would result from the alternative plan of improvement are sufficient to justify the investment required to effect them.

56. Any extension of the contemplated improvement above the head of navigation, can for the present, only hope to assure such intangible benefits as may result from the increased mooring facilities for lake carriers and recreational craft. Such an extension of the navigable channel would not result in any appreciable increase in annual benefits over those estimated to result from the improvement of the channel to the head of navigation. An extension of the Federal project above the head of navigation is not justified at this time.

57. *Recommendations.*—It is recommended that the existing project at Ashtabula Harbor, Ohio, be modified to provide for a channel 16 feet deep with a bottom width of 100 feet to a point 1,550 feet upstream from the southerly end of the turning basin, all as shown on the accompanying map, at an estimated total cost of $38,000, with maintenance estimated at $2,000 annually in addition to that now

required, provided that local interests give assurances satisfactory to the Secretary of War that they will deepen to a like depth and maintain the area between that channel and the docks, and agree to hold and save the United States free from all damages incidental to the improvement and maintenance thereof.

GEORGE R. GOETHALS,
Major, Corps of Engineers,
District Engineer.

[First endorsement]

OFFICE, DIVISION ENGINEER,
Great Lakes Division,
Cleveland, Ohio, February 17, 1941.

To: The Chief of Engineers, United States Army.

I concur in the recommendation of the district engineer.

U. S. GRANT 3d,
Brigadier General, Army of the United States,
Division Engineer.

○

WAR DEPARTMENT

CORPS OF ENGINEERS, U.S. ARMY

REVIEW OF PREVIOUS REPORTS

ST. JOHNS RIVER, FLORIDA
(JACKSONVILLE TO THE OCEAN)
GENERAL MAP

IN 3 SHEETS — SHEET NO. 1 — SCALE 1:64,000

SCALE IN FEET. 1000 0 1000 5000 10,000 15,000

OFFICE, DIVISION ENGINEER, SOUTH ATLANTIC DIVISION, NOV. 19, 1940

RECOMMENDED: Earl Bullard, PRINCIPAL ENGINEER

APPROVED: Jarvis J. Bain, COL., CORPS OF ENGINEERS

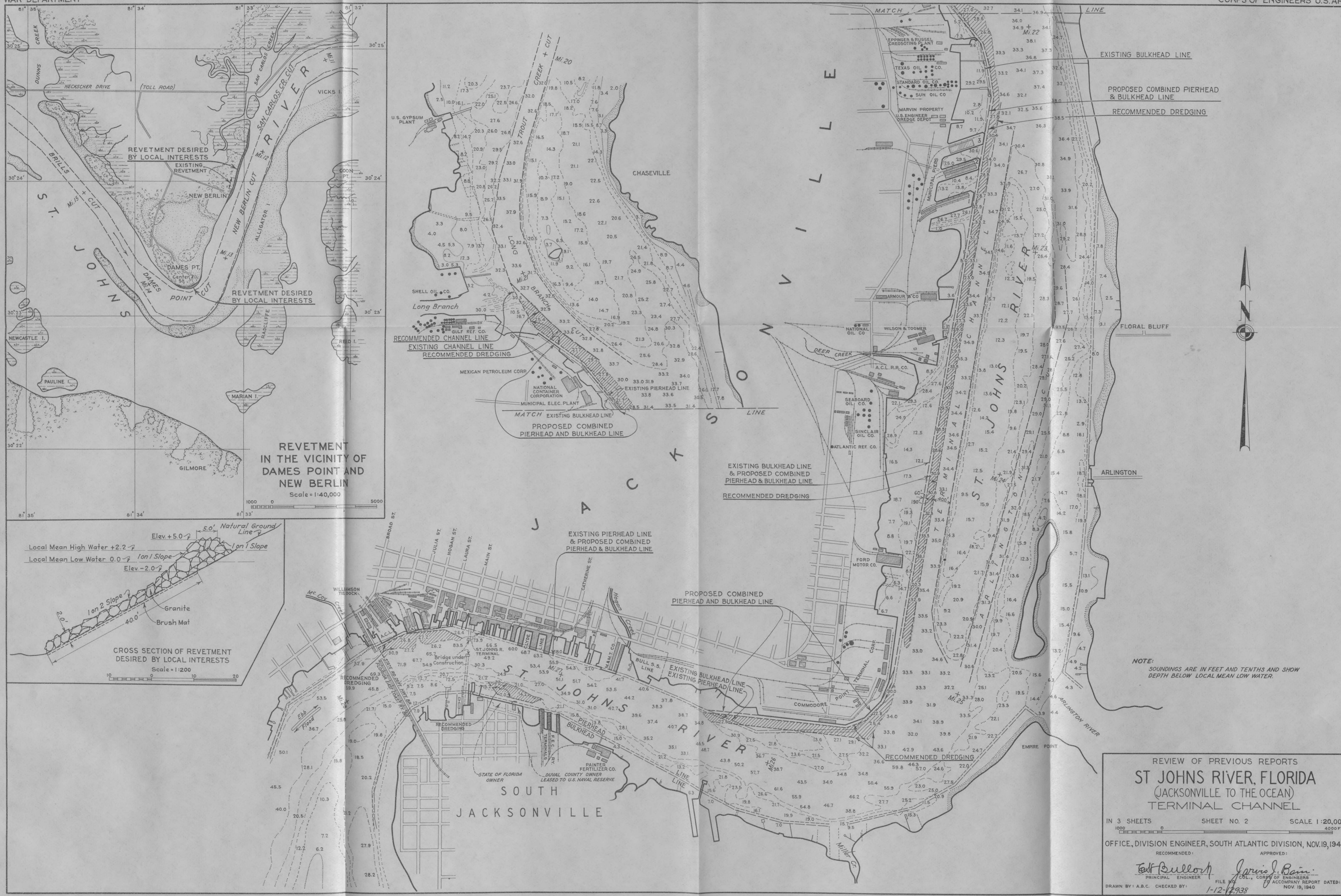
DRAWN BY: G.A.V. & R.L.M. — CHECKED BY: G.S.M. — FILE NO. 1-12-12.738 — TO ACCOMPANY REPORT DATED: NOV. 19, 1940

HOUSE DOC. NO. 322, 77TH CONG., 1ST SESSION

U. S. GOVERNMENT PRINTING OFFICE: 1941—O-61034

WAR DEPARTMENT

CORPS OF ENGINEERS U.S.ARMY

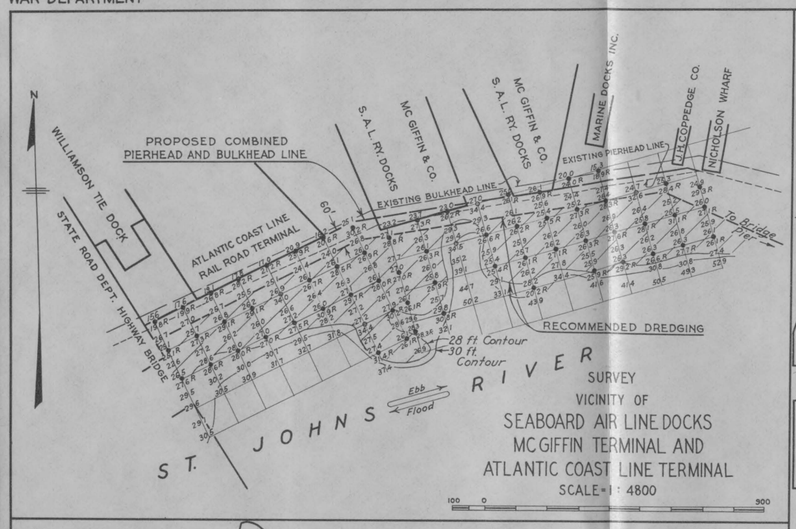


HOUSE DOC. NO. 322, 77TH CONG., 1ST SESSION

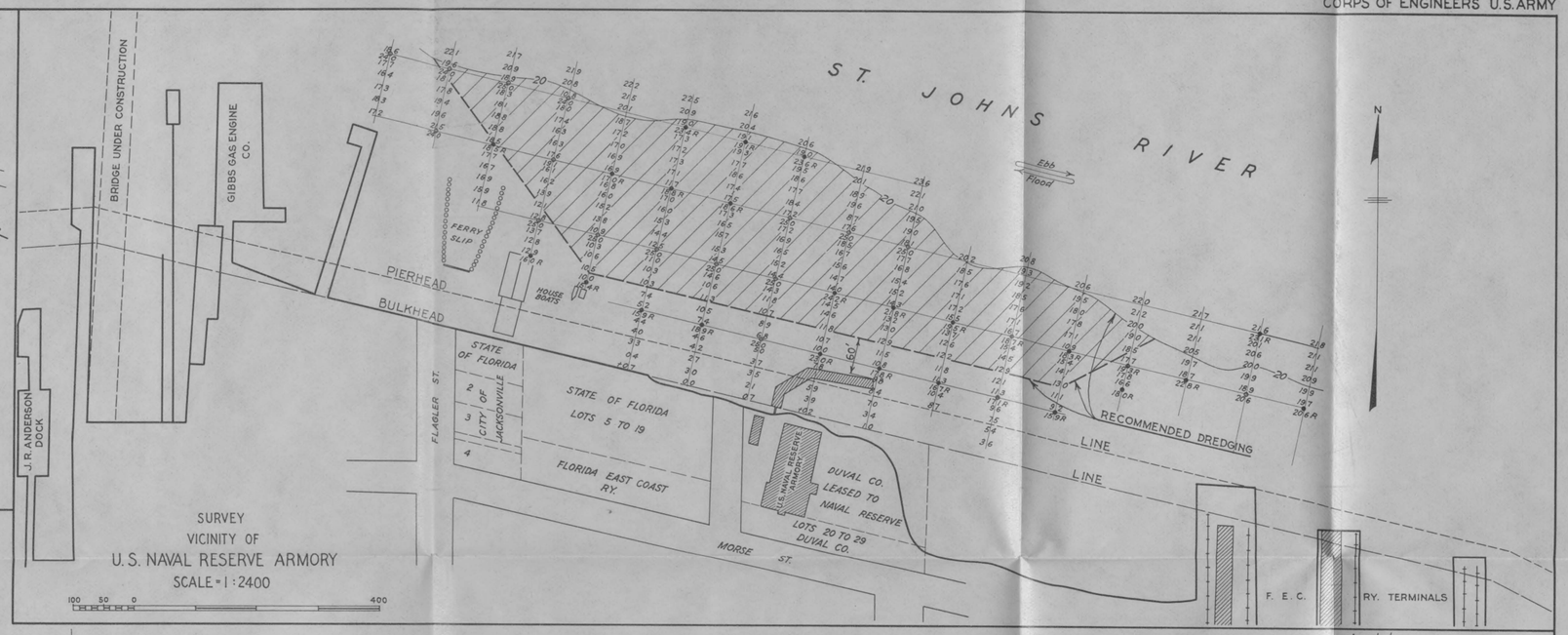
U. S. GOVERNMENT PRINTING OFFICE : 1941—O-61034

WAR DEPARTMENT

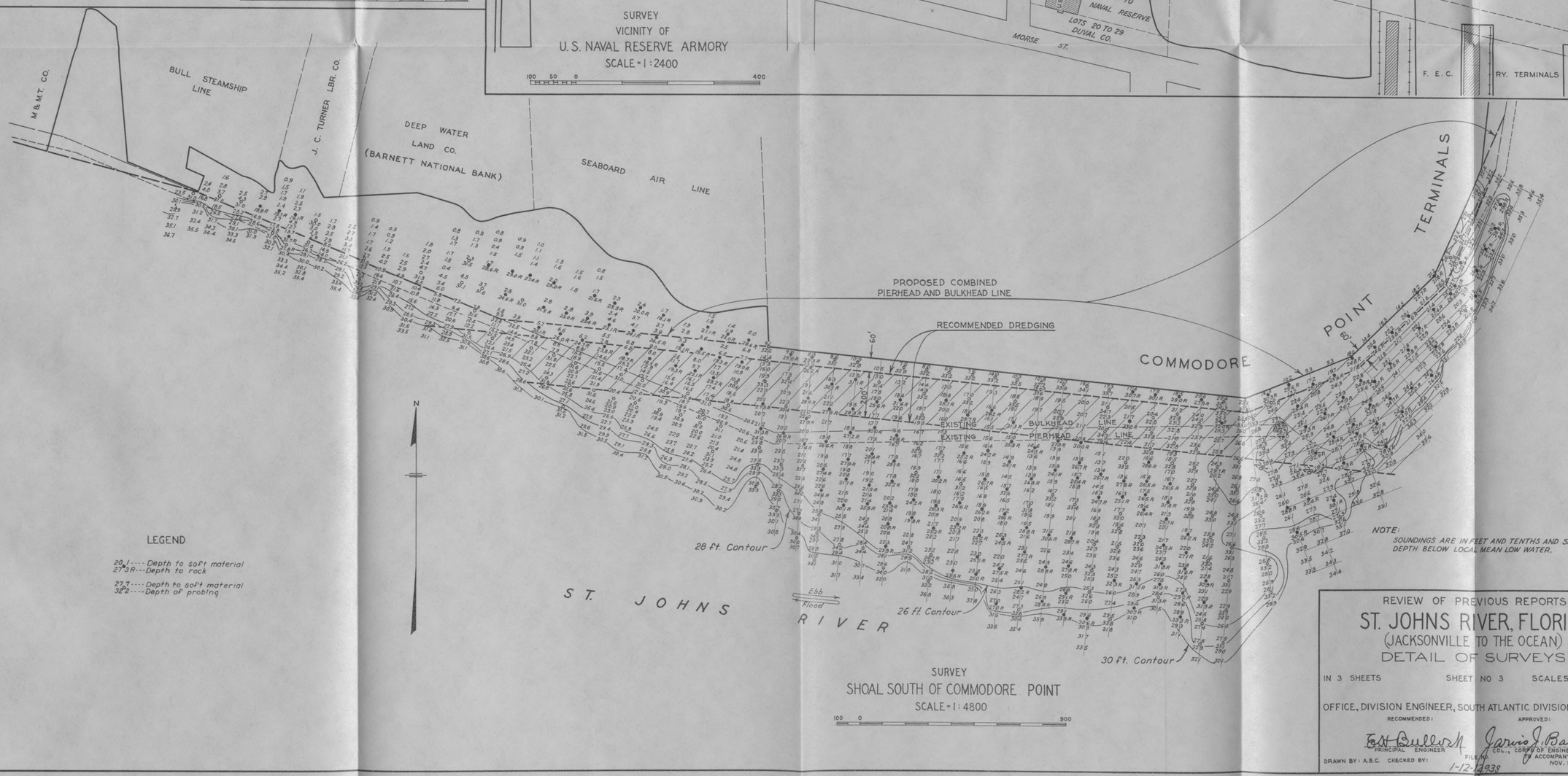
CORPS OF ENGINEERS U.S.ARMY



SURVEY
VICINITY OF
SEABOARD AIR LINE DOCKS
MC GIFFIN TERMINAL AND
ATLANTIC COAST LINE TERMINAL
SCALE = 1 : 4800



SURVEY
VICINITY OF
U.S. NAVAL RESERVE ARMORY
SCALE = 1 : 2400
100 50 0 400



LEGEND

20.1 ---- Depth to soft material
27.3R --- Depth to rock

27.7 ---- Depth to soft material
32.2 ---- Depth of probing

SURVEY
SHOAL SOUTH OF COMMODORE POINT
SCALE = 1 : 4800
100 0 300

NOTE:
SOUNDINGS ARE IN FEET AND TENTHS AND SHOW DEPTH BELOW LOCAL MEAN LOW WATER.

REVIEW OF PREVIOUS REPORTS

ST. JOHNS RIVER, FLORIDA
(JACKSONVILLE TO THE OCEAN)
DETAIL OF SURVEYS

IN 3 SHEETS SHEET NO 3 SCALES AS SHOWN

OFFICE, DIVISION ENGINEER, SOUTH ATLANTIC DIVISION, NOV. 19, 1940

RECOMMENDED: Edd Bullock, PRINCIPAL ENGINEER

APPROVED: Jarvis J. Bain, COL., CORPS OF ENGINEERS

DRAWN BY: A.B.C. CHECKED BY:

FILE NO. 1-12-1938

TO ACCOMPANY REPORT DATED: NOV. 19, 1940

HOUSE DOC. NO. 322, 77TH CONG., 1ST SESSION

U. S. GOVERNMENT PRINTING OFFICE : 1941—O-61034